PmCentersUSA

National Aeronautics and Space Administration

Identifying & Handling Problem Projects

Presented to:

PM CHALLENGE 2007

Fourth Annual NASA
Project Management Challenge Conference

by:

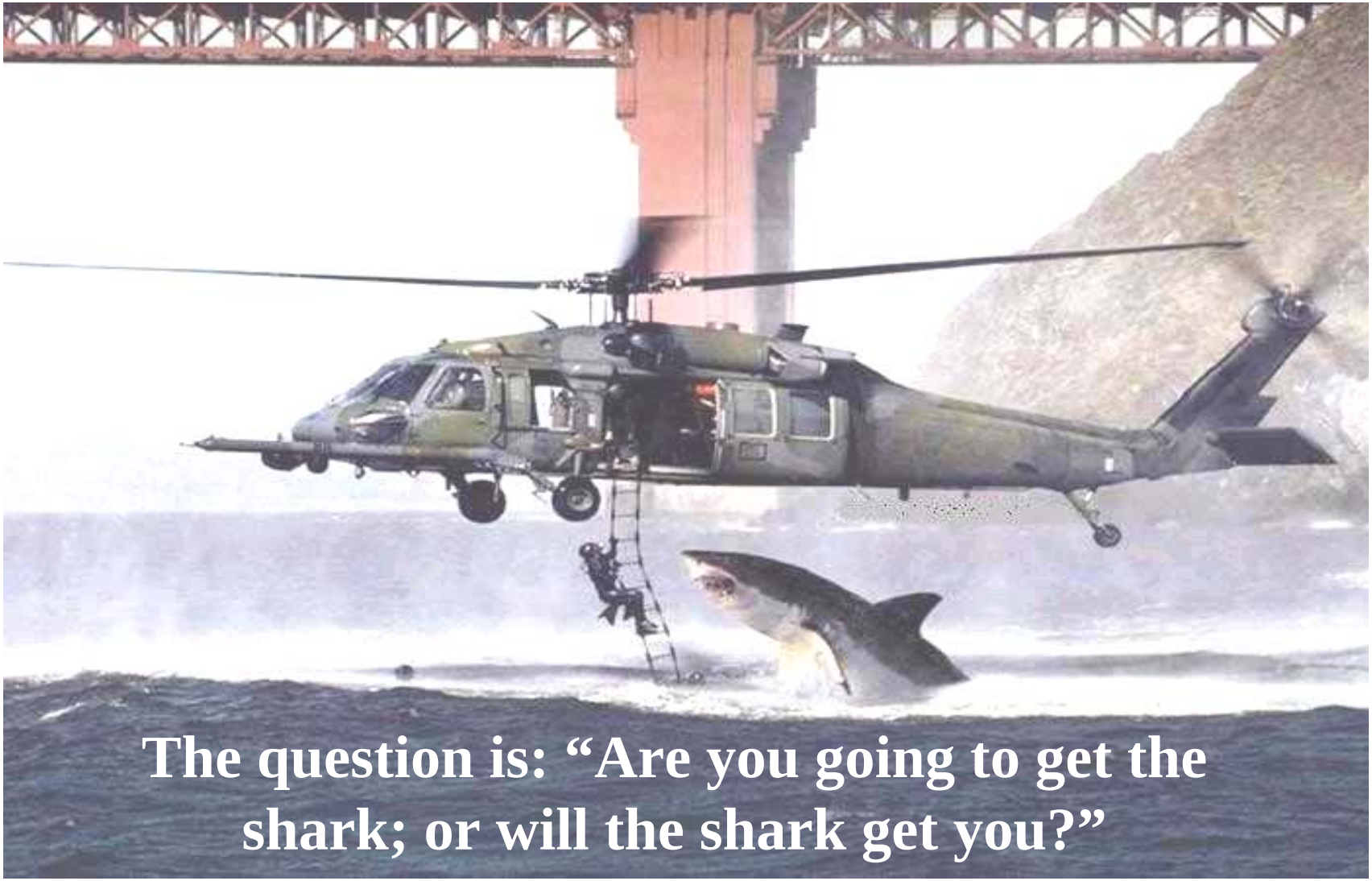
Walter Bowman, PMP, PMI Fellow

February 6-7, 2007

634 Alpha Drive • Pittsburgh, Pennsylvania 15238 • (412) 963-1347

Project Management Institute

The Reality of Dealing with Problem Projects



What is a Problem Project?

- A temporary state of uncertainty or undesired status of a project, *or* . . .
- A unique challenge never seen nor wanted to be seen on a project, *which may result in* …

wondering which way to go …

What Causes Problem Projects?

The major contributor to a project becoming a **problem project** is that the most critical problem, or problems, in the project are not receiving - or have not received - adequate attention.

Problem Symptoms at Project Start

"I knew the project was in trouble from the start when . . ."

- Critical resources were not identified
- The users said they had no time to get involved
- No one could describe the goals of the project
- Dates and budgets were dictated before the project started
- Functional leads said they thought we should not be doing this
- We had a new problem using new technology with a new team

Problem Symptoms During Project Execution

"Once we got started, I could tell we were in trouble when . . ."

- We never updated the schedule
- A key technical person quit and left no documentation
- The rate of missed milestones was increasing
- Communication plan was ignored
- There was complete "radio silence" from the team
- We realized the sales people misrepresented a lot
- New features were added without specifications

Problem Symptoms Towards Project End

"When we got near the end of the project, I could see we were in trouble when . . ."

- The market requirements had changed
- The end-users started changing their definitions of the system once they started seeing the final product
- The client said they did not get what they wanted
- New stakeholders appeared
- There was no objective measurement for successful completion

Types of Problem Projects

Projects with:

- Simple Problems
- Complex Problems
- Wicked Problems

Simple Problem Projects

Projects with **simple problems** have a consensus among the stakeholders with regards to what the problem is and the solution to the problem.

Simple Problem Examples

"You're gonna' need a bigger boat . . . "

Roy Scheider as *Police Chief Martin Brody* in Universal Pictures' *"Jaws,"* 1975.

Complex Problem Projects

Projects with **complex problems** introduce conflict into the problem solving process. Although the stakeholders may agree on what the problem is, they have no consensus on the solution to the problem.

Complex Problem Examples

"That's a very big lizard . . . "

Jeff Goldblum as *Ian Malcolm* to Sam Neill as *Alan Grant* in Universal Studios' "*Jurassic Park,*" 1993.

Wicked Problem Projects

Projects with **wicked problems** introduce a high level of conflict among the stakeholders as to not only what the problem is, but also what, if any, is the solution to the problem.

Wicked Problem Examples

"Houston, we have a problem . . . "

Tom Hanks as *Astronaut Jim Lovell* in University City Studios' *"Apollo 13,"* 1995.

Solving the Right Problem

"Successful problem solving requires the right solution to the right problem.

We fail more often because we solve the wrong problem than because we get the wrong solution to the right problem."

Russell L. Ackoff, Ph. D., 1974
Anheuser Bush Professor Emeritus of Management Science
The Wharton School, University of Pennsylvania

Do You Really Have a Problem Project?

First things first: validate whether or not the project is really a "problem" project.

- Are things really outside the set tolerances for control?
- Is the problem significant enough to warrant action?
- Has the problem already been recognized and is action in progress?
- Is the problem so big that you have no control over the outcome?
- Do you need assistance beyond the project team for resolution?

Systematic Problem Resolution

Systematic Problem Resolution is a structured investigation that aims to identify the true cause of the problem, and the action necessary to eliminate it through:

Identification

Understanding

Assessment & Analysis

Identify Alternatives

Select & Implement

Problem Identification

When a problem is very small, it maybe very difficult to identify, but it is usually very easy to fix. But when a problem becomes large, it is very easy to see, but almost always very difficult to fix!

We need to identify a problem when it is small and maybe easier to fix. Tools to help identify problems early include:

- Early Warning Signals
- Critical Incidents
- Management by Walk Around

Problem Understanding

To ensure that your problem solving efforts are aimed at the right problem, you must understand the nature of the problem. The tools that can help you, include:

- Brainstorming
- Workflow Diagrams
- Go See for Yourself

Example: A "Team Morale" Problem

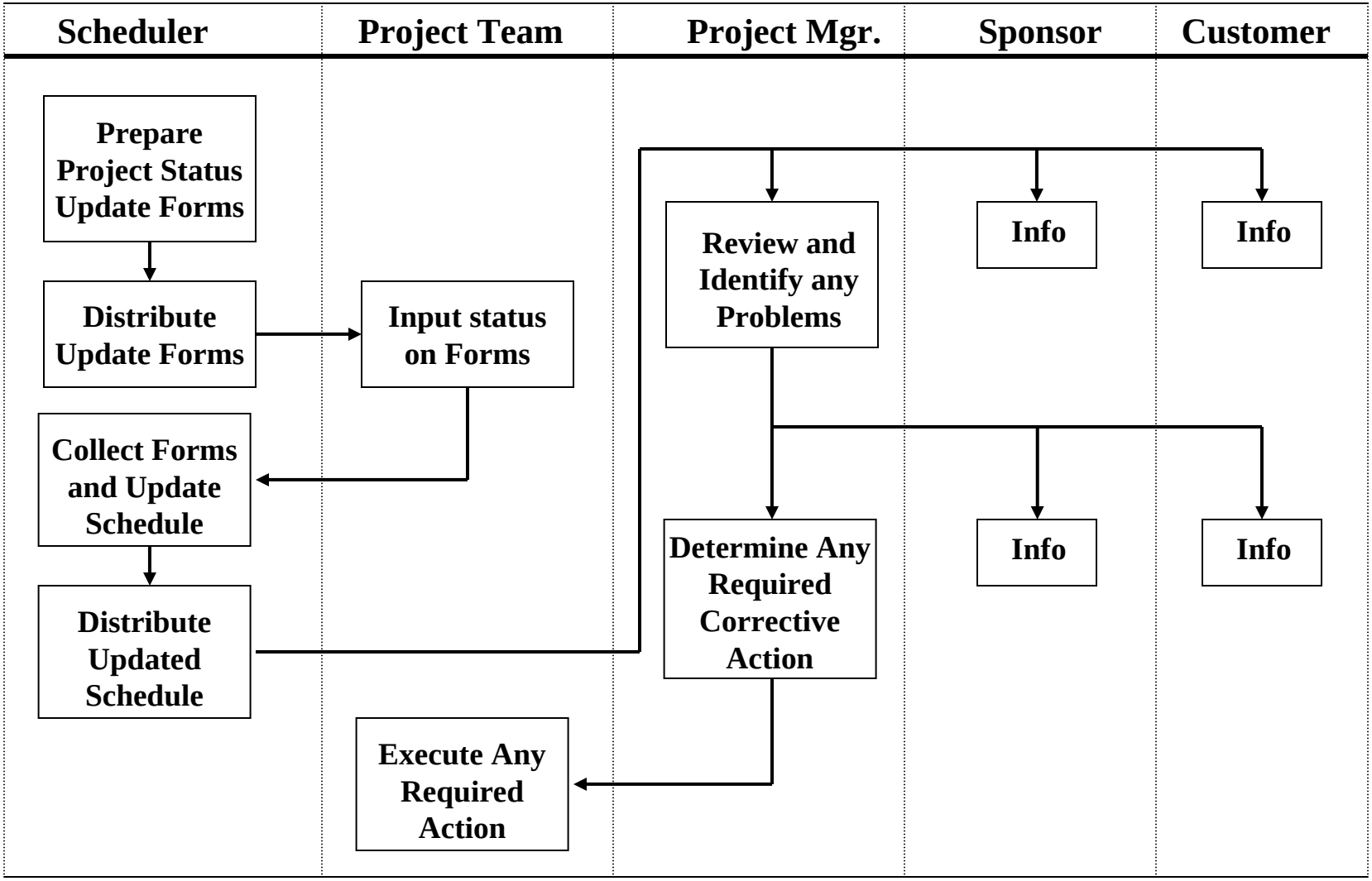
On a relatively complex technical project, there appeared to be a team morale problem manifested by a lot of grumbling by the team members.

Combining a "*Go See for Yourself*" method with some informal "*Brainstorming,*" two "*Critical Incidents*" kept coming up from the team members:

1. At times, the team was told to take specific corrective actions to resolve schedule problems which they thought were not well thought-out and technically inappropriate, *and*
2. Many times they were questioned by the project Sponsor or Customer about schedule problems they knew nothing about.

Question: What's creating these "*Critical Incidents?*"

Workflow Diagram of Schedule Updates



Problem Assessment & Analysis

At this point of the problem solving process it is tempting to charge ahead and try to solve the problem in one fell swoop by attacking all of its possible causes.

You'll be better off doing more analysis to identify the "root cause" of the problem. So be patient, go the extra mile, and find the "root cause" by using something like:

The Five Why's Method

The 5 Why's Method

A simple, easy, to use tool to find the "root cause" of a problem. It works, but can be a very annoying process.

It simply involves asking ***"Why?"*** over and over again, until the person (sometimes yourself) either goes nuts or comes up with the answers.

Usually five times keeps people from going too nuts and tends to get to the root cause.

Steps in Using the 5 Why's Method

- Use the results from the "Problem Identification and Assessment" processes as a starting point.
- Gather your team and brainstorm for possible causes below the starting point.
- Ask "*Why is this a cause for the problem?*"
- For each new answer to the question, ask the question again, continuing until no new answer results.
- Portray the chain of causes/level of problem in a simple chart with possible counter-measures.

Identification of Alternative Solutions

Once the root cause of the problem is identified and understood, identify alternative solutions to solve the problem taking into consideration overall project objectives, resources, and constraints.

Get a bigger boat?

Get more boats?

Call the Coast Guard?

Drop Richard Dreyfuss over the side in a cage?

Move away from Amity Island?

Stick an oxygen bottle in the shark's mouth and shoot it?

Selection and Implementation of Solution

Select the appropriate solution and implement it as you would with any project:

Initiate

Plan

Execute

Monitor & Control

Close

Implementation of Turnaround Solutions

There are no hard and fast rules.

Steps taken will depend on:

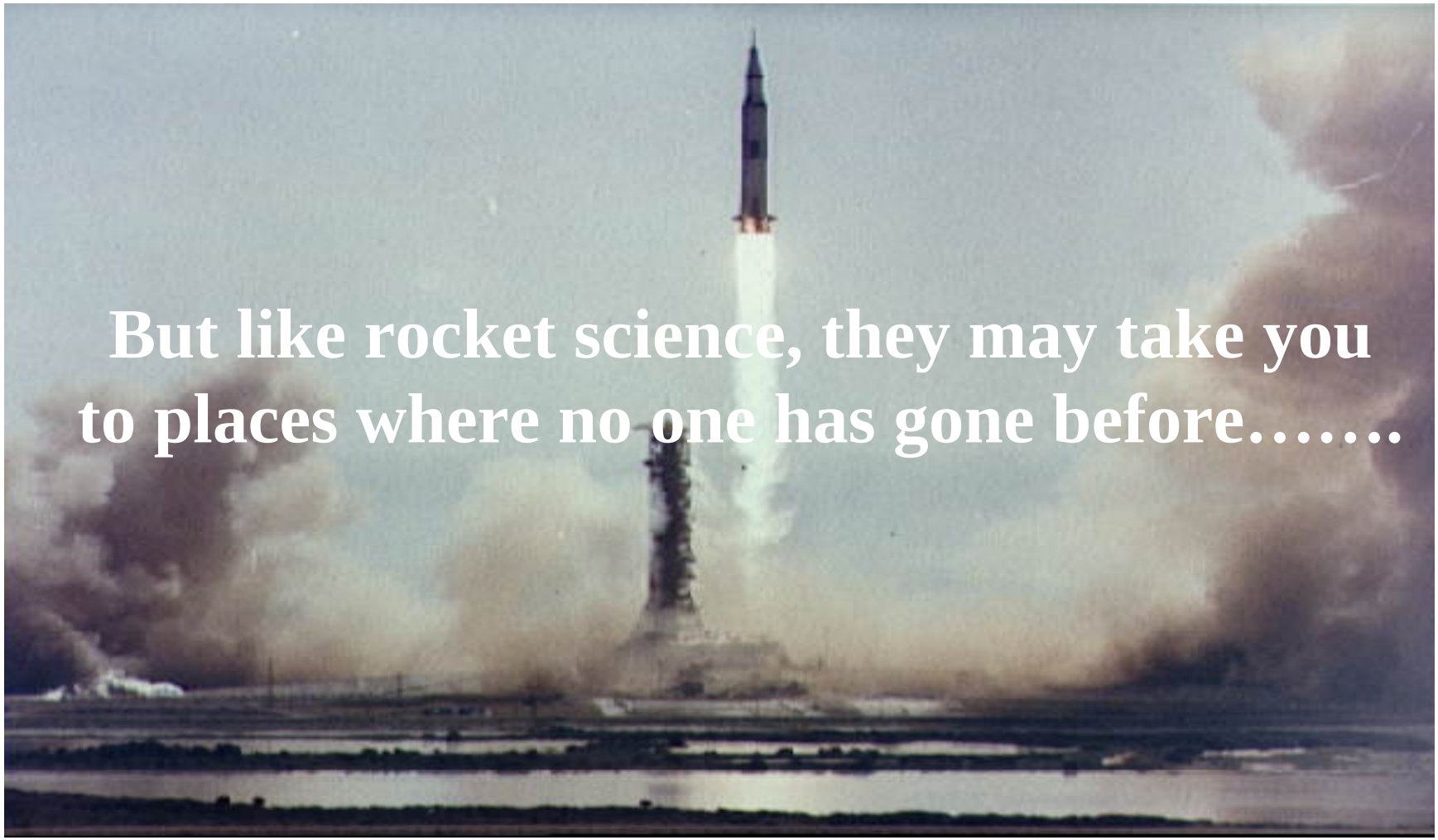
- the type of problem (Simple, Complex, Wicked)
- the seriousness of the problem
- time and resources available
- the organization's project management maturity

However, there are some key things to keep in mind.

Critical Steps to Problem Project Turnaround

- Develop a shared understanding of the problem
- Develop a shared commitment to the solution
- Develop a clear understanding of the expected results of the turnaround
- Communicate the expected results of the turnaround
- Develop clear roles and responsibilities with regards to the solution implementation
- Be prepared to stop the project, or part of the project, to focus on the turnaround

Problem Projects Aren't Rocket Science



Apollo 11 Liftoff: July 16, 1969 *NASA JSC Digital Image: Photo S69-39525*

Questions ?

634 Alpha Drive • Pittsburgh, Pennsylvania 15238 • (412) 963-1347